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EXAMINER	
NGUYEN, TUAN N	

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2828	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/822,005	ABE ET AL.	
	Examiner	Art Unit	
	TUAN N. NGUYEN	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02/01/2008*.

2a)☒ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,6-11,15-17,21-23 and 30-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 6-11, 15-17, 21-23, 30-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *02/01/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Detail Actions

1. In responding to applicant's amendment filed 02/01/2008, claims 1, 6-8, 33 have been amended. Claims 2-5, 12-14, 18-20, 24-29 have been canceled. Claims 37-41 have been added.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or non-obviousness.

3. Claims 1, 6-11, 15-17, 21-23, 30-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosokawa (US 6660410) in view of Baird et al. (US 5260963).

With respect to claim 1, Hosokawa '410, shows and discloses a laser oscillator comprising: an optical resonator for and a pumping source for supplying pumping energy to the

laser medium; a film containing a laser medium formed over a substrate *(Fig 1: 14, 18 film containing laser medium over substrate);* an anode; and a cathode, wherein the laser medium comprises a luminescent layer *(Col 1: 5-20)(Col 25-26: Anode, cathode and laser medium on supporting substrate) (Fig 1: 10,14,16 excited laser medium with luminescent layer between cathode and anode),* wherein the luminescent layer includes a phosphorescent material dispersed into a host material at a concentration such that the luminescent layer generates excimer emission *(it is inherent that the luminescent generate emission)* , wherein the pumping source is electrically connected to the anode or cathode, *(it is inherent to one skill in the art to recognize that a power source is electrically connected to the anode(+) or cathode (-) source so there is power to run the pumping source),* wherein the phosphorescent material is an organic metal complex *(ABSTRACT: organic luminescence; Col 5: 22-35; Col 23: 12-30 phosphorescent organic metal complex)* and wherein in luminescence of the phosphorescent material, light is amplified by the optical resonator. The claim further requires an optical oscillator with resonator and a pumping source for supplying pumping energy to the laser medium and amplified by the optical resonator. Hosokawa '410 did not discreetly disclose an oscillator with resonator and pumping source pumping the medium. Baird et al. '963 discloses and shows a laser resonator and pumping source pumping a laser medium *(Fig 2: 80 laser medium, and optical resonator 108, 120, where 20 laser diode pumping source to medium 80 and amplified by optical resonator).* It would have been obvious to one of ordinary skill in the art to provide Hosokawa '410 with the laser medium as taught or suggested by Hosokawa '410, for the benefit of exciting the laser medium for emission, as shown by Baird et al.

With respect to claim 6, Hosokawa ‘410, shows and discloses a laser oscillator comprising: a film containing a laser medium formed over a substrate *(Fig 1: 14, 18 film containing laser medium over substrate)*; an optical resonator for obtaining a laser beam; a pumping source for supplying pumping energy to the laser medium; an anode; and a cathode *(Fig 1: 10, 16 anode cathode)*, wherein the laser medium comprises a luminescent layer, wherein the luminescent layer includes a phosphorescent material dispersed into <u>a</u> host material at a concentration <u>such that the luminescent layer generates excimer emission</u> *(it is inherent that the luminescent generate emission),* wherein the anode and the cathode include a light transmitting property, wherein the luminescent layer is interposed between the anode and the cathode *(Fig 1: 10,14,16 excited laser medium with luminescent layer between cathode and anode)*, wherein the pumping source is electrically connected to the anode or cathode, *(it is inherent to one skill in the art to recognize that a power source is electrically connected to the anode(+) or cathode (-) source so there is power to run the pumping source),* <u>wherein the phosphorescent material is an organic metal complex</u> *(ABSTRACT: organic luminescence; Col 5: 22-35; Col 23: 12-30 phosphorescent organic metal complex)* and wherein in luminescence from an excimer state of the phosphorescent material, unidirectional light across the film containing the laser medium is amplified by the optical resonator. The claim further requires an optical oscillator with resonator and a pumping source for supplying pumping energy to the laser medium and amplified by the optical resonator. Hosokawa ‘410 did not discreetly disclose an oscillator with resonator and pumping source pumping the medium. Baird et al. ‘963 discloses and shows a laser resonator and pumping source pumping a laser medium *(Fig 2: 80 laser medium, and optical resonator 108, 120, where 20 laser diode pumping source to medium 80 and amplified by optical*

resonator). It would have been obvious to one of ordinary skill in the art to provide Hosokawa '410 with the laser medium as taught or suggested by Hosokawa '410, for the benefit of exciting the laser medium for emission via amplification of the resonator, as shown by Baird et al.

With respect to claim 7, Hosokawa '410, shows and discloses a laser oscillator comprising: a film containing a laser medium formed over a substrate substrate *(Fig 1: 14, 18 film containing laser medium over substrate)*; an optical resonator for obtaining a laser beam; a pumping source for supplying pumping energy to laser medium; an anode; and a cathode, wherein the laser medium comprises a luminescent layer, wherein the luminescent layer includes a phosphorescent material dispersed into <u>a</u> host material at a concentration <u>such that the luminescent layer generates excimer emission</u> *(it is inherent that the luminescent generate emission),* wherein the luminescent layer is interposed between the anode and the cathode *(Fig 1: 10,14,16 excited laser medium with luminescent layer between cathode and anode)*, wherein the pumping source is electrically connected to the anode or cathode, *(it is inherent to one skill in the art to recognize that a power source is electrically connected to the anode(+) or cathode (-) source so there is power to run the pumping source),* <u>wherein the phosphorescent material is an organic metal complex</u> *(ABSTRACT: organic luminescence; Col 5: 22-35; Col 23: 12-30 phosphorescent organic metal complex)* and wherein in luminescence from an excimer state of the phosphorescent material, unidirectional light contained within a surface composed of the film containing the laser medium is amplified by the optical resonator. The claim further requires an optical resonator and a pumping source for supplying pumping energy to the laser medium and amplified by the optical resonator. Hosokawa '410 did not discreetly disclose an oscillator with

resonator and pumping source pumping the medium. Baird et al. '963 discloses and shows a laser oscillator with resonator and pumping source pumping a laser medium *(Fig 2: 80 laser medium, and optical resonator 108, 120, where 20 laser diode pumping source to medium 80 and amplified by optical resonator)*. It would have been obvious to one of ordinary skill in the art to provide Hosokawa '410 with the laser medium as taught or suggested by Hosokawa '410, for the benefit of exciting the laser medium for emission via amplification of the resonator, as shown by Baird et al.

With respect to claim 8, Hosokawa '410, shows and discloses a laser oscillator comprising:

a film containing a laser medium formed over a substrate *(Fig 1: 14, 18 film containing laser medium over substrate)*; an optical resonator for obtaining a laser beam;a pumping source for supplying pumping energy to the laser medium; an anode; and a cathode, wherein the laser medium comprises a luminescent layer, wherein the luminescent layer includes a phosphorescent material dispersed into <u>a</u> host material at a concentration <u>such that the luminescent layer generates excimer emission</u> *(it is inherent that the luminescent generate emission)*, wherein the pumping source is electrically connected to the anode or cathode, *(it is inherent to one skill in the art to recognize that a power source is electrically connected to the anode(+) or cathode (-) source so there is power to run the pumping source)* wherein the optical resonator comprises a plurality of reflective materials, wherein the anode includes a light transmitting property *(Col 7: 10-20 it is inherently obvious the resonator comprises of reflective materials so reflectivity can occur, and it is inherent that the anode includes light transmitting property so that*

electroluminescence can be emitted)(Col 25: 38-40 anode transparent), wherein the luminescent layer is interposed between the cathode and the plurality of reflective materials *(Fig 1: 10,14,16 excited laser medium with luminescent layer between cathode and anode and reflective materials)*, and wherein in luminescence from an excimer state of the phosphorescent material, unidirectional light across the film containing the laser medium is amplified by the cathode and the plurality of reflective materials, as shown by Baird et al.

With respect to claims 9-11, 30, 34 Hosokawa ‘410, shows and discloses further comprising a hole transporting layer contacting with the luminescent layer and formed between the anode and the luminescent layer, the hole transporting layer having an ionization potential that is either (i) lower than that of the luminescent layer or the host material or (ii) higher than that of the luminescent layer or the host material with an energy gap of not more than 0.4 eV *(Col 23-24: 10-40 hole transport layer with ionization 5.5ev or less)* .

With respect to claims 15-17, 31, 35 Hosokawa ‘410, shows and discloses wherein the phosphorescent material generates luminescence having two or more peaks in a wavelength region of not smaller than 500 um and not larger than 700 nm, and any one of the two or more peaks is excimer emission *(Col 1: 10-35 phosphorescent material having three peaks and wavelength about 488nm which is not larger then 700nm (Col 5: 1-5))*.

With respect to claims 21-23, 32, 36 Hosokawa ‘410, shows and discloses wherein the phosphorescent material includes an organic metal complex with platinum as its central metal *(Col 23: 15-30 organic complex with platinum)*.

With respect to claim 33, Hosokawa ‘410, shows and discloses a laser oscillator comprising: a film containing a laser medium formed over a substrate *(Fig 1: 14, 18 film containing laser medium over substrate)*; an optical resonator for obtaining a laser beam; a pumping source for supplying pumping energy to the laser medium; an anode; and a cathode, wherein the laser medium comprises a luminescent layer, wherein the luminescent layer includes a host material and a phosphorescent material dispersed into the host material at a concentration <u>such that the luminescent layer generates excimer emission</u> *(it is inherent that the luminescent generate emission)*, wherein at least one of the anode and the cathode includes a light transmitting property *(Col 25-26: 38-40, 20-19 at least one of anode or cathode includes light transmitting property, so light emission can be seen Col 7: 10-20)* wherein the luminescent layer is interposed between the anode and the cathode *(Fig 1: 10,14,16 luminescent layer between cathode and anode)*, wherein the pumping source is electrically connected to the anode or cathode, *(it is inherent to one skill in the art to recognize that a power source is electrically connected to the anode(+) or cathode (-) source so there is power to run the pumping source)* <u>wherein the phosphorescent material is an organic metal complex</u> *(ABSTRACT: organic luminescence; Col 5: 22-35; Col 23: 12-30 phosphorescent organic metal complex)*, and wherein in luminescence from an excimer state of the phosphorescent material, light is amplified by the optical resonator. The claim further requires an optical resonator and a pumping source for supplying pumping energy to the laser medium and amplified by the optical resonator. Hosokawa ‘410 did not discreetly disclose an oscillator with resonator and pumping source pumping the medium. Baird et al. ‘963 discloses and shows a laser oscillator with resonator and

pumping source pumping a laser medium *(Fig 2: 80 laser medium, and optical resonator 108, 120, where 20 laser diode pumping source to medium 80 and amplified by optical resonator).* It would have been obvious to one of ordinary skill in the art to provide Hosokawa '410 with the laser medium as taught or suggested by Hosokawa '410, for the benefit of exciting the laser medium for emission via amplification of the resonator as shown by Baird et al.

With respect to claims 37-41, Hosokawa '410 and discloses wherein the concentration is not less then 10wt% *(Col 23: 60-63 0.1 to 30 parts by weight per 100 parts by weight)(Col 24: 5-10, 10-30, 55-65, 1-10, 1-67 where luminescent layer include a host material and phosphorescent material is over 30 part by weight).*

Response to Argument

4. Applicant's remark filed on 10/03/2007 has been fully considered but they are not persuasive.

With respect to REMARKS, the Applicant points out neither Hosokawa, Baird nor any combination of the two describes or suggests phosphorescent material that is an organic metal complex such that luminescent layer generates excimer emission. The Applicant continues to point out no where mention the word excimer or shows phosphorescent material generate luminescence having two or more peaks. The examiner stands, Hosokawa '410 discloses the organic metal complex in *(ABSTRACT: organic luminescence; Col 5: 22-35; Col 23: 12-30 phosphorescent organic metal complex).* The examiner also wants to point out, the claims contain no elements/limitations that result in excimer emission as argued. In addition, it is well known that an excimer emission range is in UV spectral region and generates nm wavelength,

which Hosokawa '410 discloses in *(Col 5: 1-5 488nm) and (Col 23-24: 10-40 energy gap)* as required by the dependent claims 15-17,31,35, and 9-11, 30, 34, hence excimer emission has been described. Further more, (Col 5: 1-7; Col 7: 6-20) disclose the triplet energy or having two or more peaks.

Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TUAN N. NGUYEN whose telephone number is (571) 272-1948. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harvey Minsun can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Tuan N Nguyen/

Examiner, Art Unit 2828

/Minsun Harvey/

Supervisory Patent Examiner, Art Unit 2828